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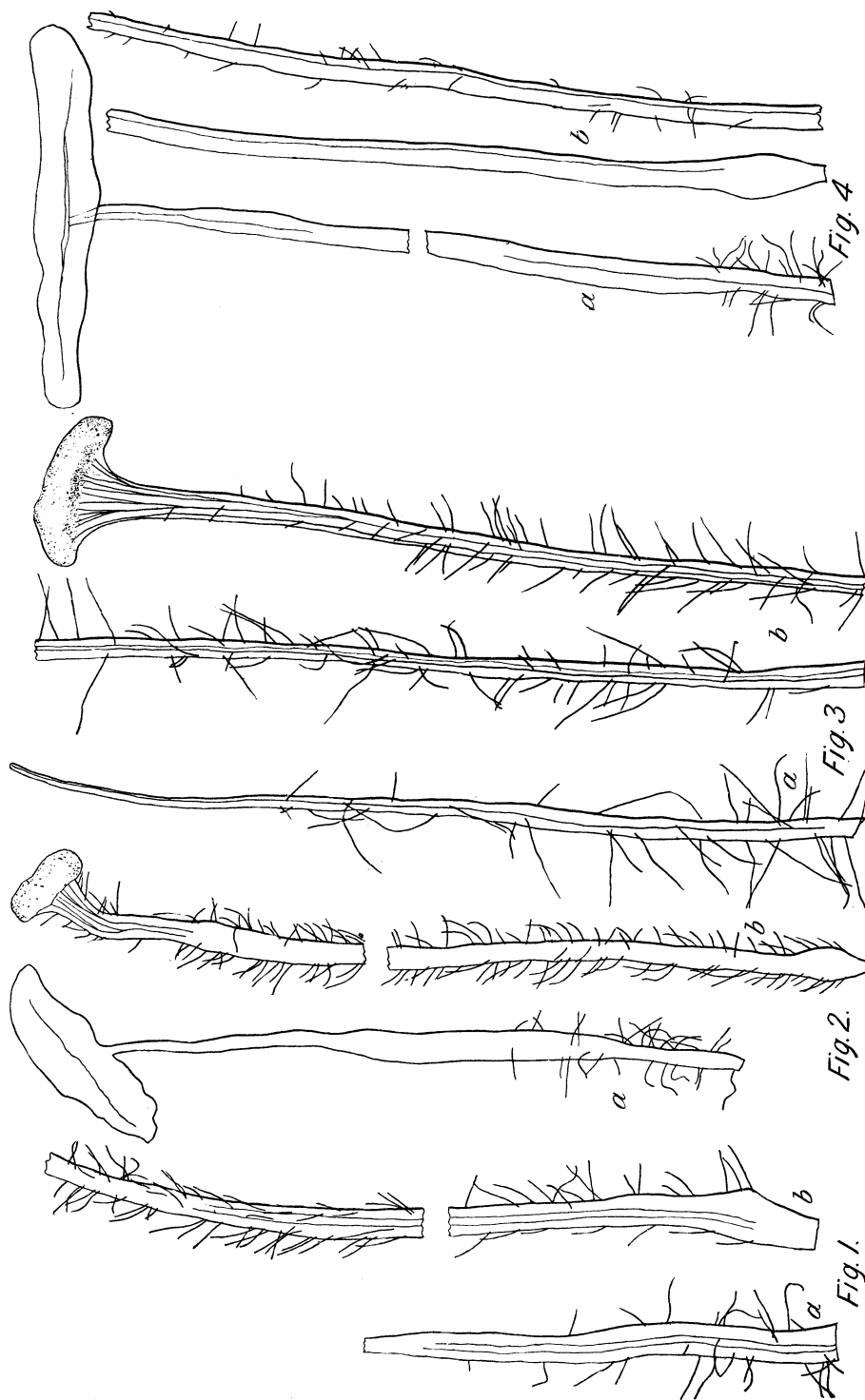
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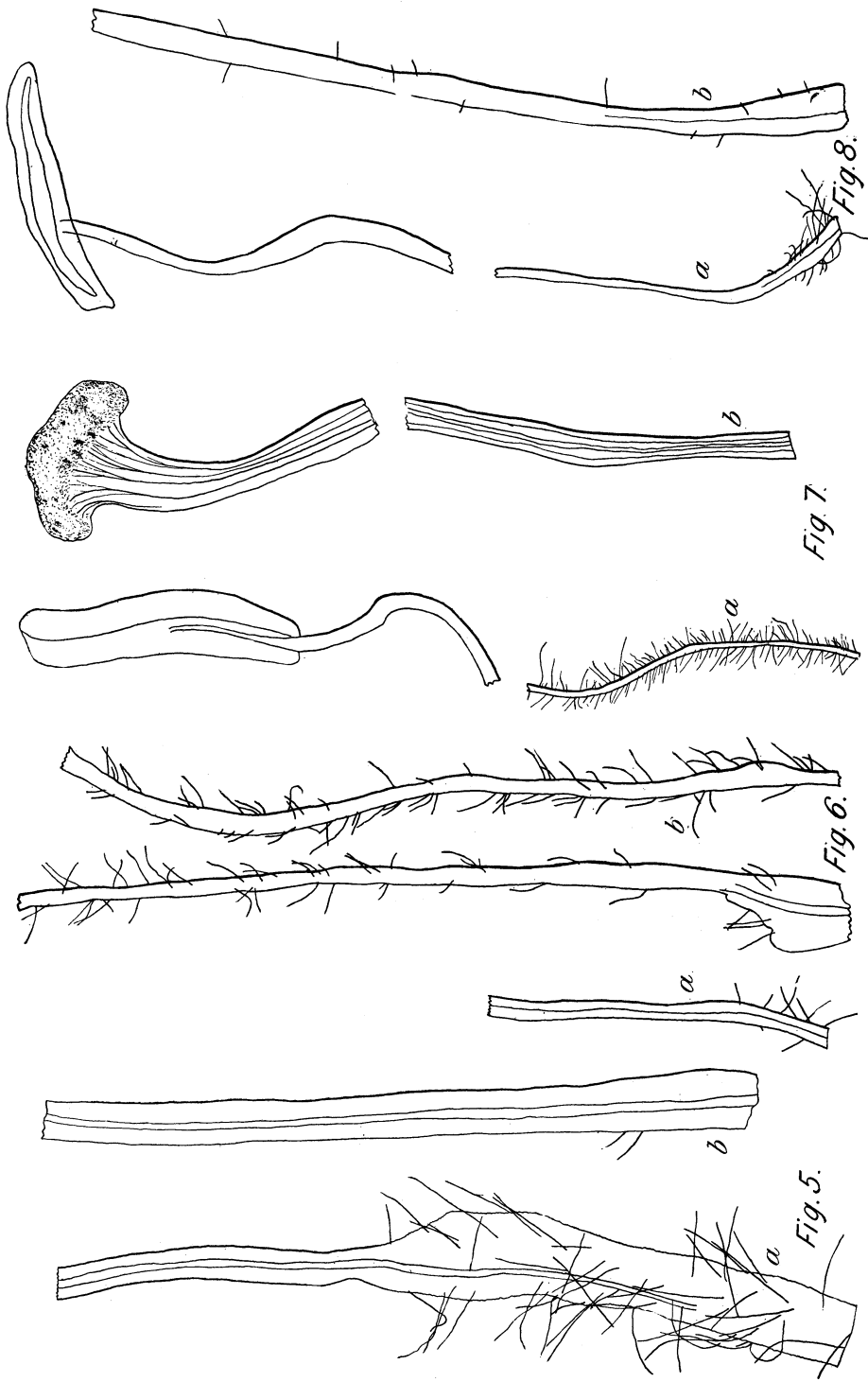
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STAMENS AND STYLES OF LONICERA.



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sessile scarcely-bracted pistillate one; pistillate spikes single, but oftener two, and frequently three, the lower ones with conspicuous bracts and on slender, exserted peduncles, of which the lowest rarely starts from near the base and is very much elongated (as happens also in the allied *C. polymorpha*), all of them sometimes staminate at the apex (*C. Carteri* Porter): perigynia crowded above, looser below, turgid, deep olive-green, nerved, globular, with a very short, more or less curved beak, or else narrowed upward and somewhat ovoid (*C. tetanica Canbyi* (Olney) Porter), both kinds being occasionally found in the same spike; scales broad, with brownish-purple margins, very obtuse, with or without rough awns, lower ones as long or longer than the perigynia, middle and upper ones shorter or even half as long.

From *C. polymorpha* it is distinguished by its rigid habit, smaller and narrower leaves and the much shorter beak of the perigynium, and from *C. tetanica*, by its stiffer habit, shorter and broader staminate and pistillate spikes, turgid and usually globular shorter-beaked perigynia, and the deep-colored margins of the scales.

THOS. C. PORTER.

An Examination of the Pubescence of the Styles and Filaments of *Lonicera hirsuta* Eaton, *L. Sullivantii* Gray and *L. glauca* Hill.

BY A. A. TYLER.

(PLATES 181 AND 182.)

As to the pubescence of the styles and filaments of *Lonicera hirsuta* Eaton, *L. Sullivantii* Gray, and *L. glauca* Hill, the characters given in Gray's Manual of Botany are:

"*L. hirsuta*, lower part of filaments hirsute."

"*L. Sullivantii*, filaments nearly glabrous."

"*L. glauca*, style and base of filaments hirsute."

With a view to determining, if possible, whether these characters are correct and possess the distinctive value usually given them, I have made an examination of the specimens of the three species in the herbarium of Columbia College, kindly furnished by Dr. Britton, at whose suggestion this examination has been undertaken. Not all the specimens of *L. hirsuta*, however, were included among those examined. The specimens in the herba-

rium of Lafayette College have been examined as well, and the results are given with some conclusions drawn from them.

Only a part of the specimens have been figured, the great similarity of many making more figures unnecessary. The filaments are uniformly lettered *a* in the figures, and are shown only as far as the point of adnation, except in figure five, which represents as well part of the adnate portion of the filament, with overlying epidermis torn loose from its attachment to the corolla. The styles are uniformly lettered *b*. In making notes I have not confined myself wholly to the characters in question, as some of the others may shed additional light on the problem.

The plants examined include *L. hirsuta* from the following localities:

Saskatchewan. Scattered hairs on lower half of filament; style rather densely hirsute above, but the hairs thinning out below (Fig. 1). Corolla not glabrous on the outside; leaves pubescent beneath.

Black Hills, Dakota. Filaments sparsely hirsute at base, extending a third of the way up; style densely hirsute in its entire length (Fig. 2). Leaves glaucous and somewhat pubescent below; corolla tube long and narrow, yellow, not glabrous outside.

Middlebury, Vermont. Filaments with long hairs scattered over the greater part of the length but most thickly at base; style thinly hirsute throughout (Fig. 3). Yellow corolla, calyx and upper part of stem glandular pubescent; leaves pubescent on both sides and ciliate-fringed, broadly oval, pale glaucous beneath.

Ashland, Nebraska. Filaments glabrous but with a single hair on each of two; style densely hirsute throughout, as in Fig. 2. Leaves pubescent beneath, not glaucous; corolla tube long and narrow, not glabrous outside.

Ishpeming, Michigan. Scattered hairs on the lower half of the filament, as in Fig. 1; style densely hirsute throughout, as in Fig. 2. General characters as in the Vermont specimen.

Isle Royale, Lake Superior. Filament and style as in the last; leaves nearly glabrous above, glandular pubescence of corolla less dense.

Oswego, New York. Filament with hairs scattered over the greater part of the length; style thinly hirsute throughout, in both

cases as in Fig. 3, but slightly denser. Corolla purplish, *hirsute on the outside but not glandular*; leaves thickish, glabrous, glaucous beneath.

Monroe county, Pennsylvania. Filaments with a few hairs at the base, as in Fig. 6; style wholly glabrous. General characters as in the Vermont specimen.

Lycoming county, Pennsylvania. Filament sparsely hirsute a third of the way up; style hirsute throughout, as in Fig. 2. Corolla glandular pubescent outside, leaves pubescent beneath.

Clearfield county, Pennsylvania. Filament with scattered hairs, except near the top, as in Fig. 3. General characters as in the Vermont plant.

Armstrong county, Pennsylvania. Filament pubescent on lower third; style densely hirsute throughout, as in Fig. 2. Corolla purplish, glandular pubescent outside; leaves thickish and pubescent only below; also pale glaucous below.

Fayette county, Pennsylvania. Filament hairy at base, as in Fig. 2; style hirsute throughout, somewhat less densely than in Fig. 2. Corolla glandular pubescent on the outside. Leaves glabrous, pale glaucous below.

But one specimen of *L. Sullivantii* was available for examination, and that being one of the type-specimens from the Columbia College Herbarium naturally corresponds with the description of Dr. Gray, and we can arrive at no definite conclusion with regard to it. The filament and style of this plant are shown in Fig. 4. The upper part of the style exhibits a few scattered hairs which are not mentioned in the description of the species.

In the specimens of *L. glauca* examined the outside of the corolla and the leaves are uniformly glabrous and the latter glaucous beneath; tube of corolla short, gibbous at base; flowers usually purplish. Flowers were examined from plants collected in the following localities:

Narrowsville, Bucks county, Pennsylvania. Both filaments and style wholly glabrous with the exception of two hairs near the base of the style of a single specimen (Fig. 5).

Charles City, Iowa. Filament with a few scattered hairs at the base; style thinly hirsute throughout (Fig. 6).

Navy Island, New York. Filaments covered nearly half way up with long fine pubescence. Style wholly glabrous (Fig. 7).

Lake Superior, of Dr. Gray's collection. Filaments slightly bearded at base with a few scattered hairs on the style (Fig. 8), tube of corolla long and narrow.

Chapman's specimen, also from Navy Island, has the same characters as the other (Fig. 7).

Wautauga River, North Carolina. Filament and style wholly glabrous, as in Fig. 5.

Blair county, Pennsylvania. Filament and style glabrous.

Huntingdon county, Pennsylvania. Filament glabrous; style with scattered hairs, intermediate between Figs. 6 and 8.

Easton, Pennsylvania. Filament hairy at base, as in Fig. 2; style glabrous.

Lancaster county, Pennsylvania. Filament and style wholly glabrous.

Of the twelve specimens of *L. hirsuta* examined, ten have the filaments hirsute or more sparingly hairy at base, often with hairs more thinly distributed nearly to the top, one has glabrous filaments, and one has but a few hairs at the base. The styles in ten of the plants are more or less densely hirsute throughout, one is glabrous, and one but slightly hairy at a point near the base.

Of the ten specimens of *L. glauca* five were found to have glabrous filaments, two had fine pubescence on the lower half and three were more or less hairy at base. The styles were glabrous in seven specimens; in two, thinly hirsute throughout; in one, with scattered hairs.

It, therefore, appears that the characters under consideration are variable, especially in *L. glauca*, but may with safety be given as follows: *L. hirsuta*, style and base of filament usually hirsute, but occasionally glabrous or nearly so; *L. glauca*, style and filaments usually glabrous, but the style sometimes more or less hairy, and base of filaments hairy or pubescent.